9 Biological Resources Impacts

9.1 Introduction

The following describes the potential impacts the proposed project may have on EFH biological resources within the project area. Impacts were evaluated by identifying potential effects on biota and determining the significance of these effects.

9.2 Significance Criteria

Project impacts on biological resources are considered significant if:

- A population of a threatened, endangered, regulated or other sensitive species is adversely affected, for example, by reduction in numbers: alteration in behavior, reproduction, or survival; or loss or disturbance of habitat. Any "take" of a listed species is considered significant.
- There is a substantial adverse effect on a species, natural community or habitat that is specifically recognized as biologically significant in local, state or federal policies, statutes or regulations.
- Any alteration or destruction of habitat that prevents reestablishment of biological communities that inhabited the area prior to the project.
- Extensive alteration or loss of biological communities in high-quality habitat that lasts longer than one year.

Installation involves cable laying and burial. Offshore operation includes the presence of the cable on the seafloor and repair of the cable should it become damaged. Based on these activities, this analysis evaluates the potential for the project to have the following effects on offshore biological resources:

- Disturbance to benthic biota during cable installation.
- Effects of oil on biological resources in the event of a release during installation.
- Adverse effects to benthic organisms during repair.

- Effects of oil on biological resources in the event of a release during repair.

Installation Impacts

The pre-lay grapnel run, cable laying and burial, and diver activity during cable pull will temporarily disturb the sediments and resident benthic communities along the cable routes. During the pre-lay grapnel run for each cable route, the grapnel blade will penetrate the seabed up to 40 centimeters (the maximum length of the blade). Cable burial, by seaplow and/or ROV, will also disturb the sediments. Although the seaplow is approximately 19 feet wide, the 12-inch-wide hollow share is the portion of the plow that will penetrate the seabed. For a relative comparison of the spatial extent of overall impacts to softbottom substrate from seaplow burial, the area to be traversed (~52 km) was compared to the overall size of the Monterey Bay National Marine Sanctuary (13,784 km^2), through which the cable route will cross. The cable route will temporarily affect less than 0.301 km^2 of bottom. This constitutes an impact of less than 2.2E-05 percent of the bottom substrate found in the Sanctuary, and indicates the relative insignificance of the temporary impact to EFH resources.

Data from hydrographic and marine biological surveys indicate most of the cable route is in soft to medium substrate. Hard substrate identified by the survey data has been identified as primarily occurring between KP 31.7 and 40.6. In these areas burial cannot be achieved and thus, although cable installation impacts to benthos may be reduced, movement of the cable over the life of the project may be more substantial to these communities. Historically, assessment for other cable projects have shown increased colonization by epifaunal organisms on exposed acoustic cables (Kogan et al. 2003).

Biological surveys determined that the substrate is unconsolidated coarse sand and clays. The benthic biota was generally characterized as having low diversity and low abundance, and contained no sensitive species. Based on these data, activities associated with cable installation will disturb soft substrate and its resident biota.

Potential impacts to soft substrate organisms are related to sediment suspension during cable installation, which cause localized, increased turbidity levels, as well as physical burial and destruction of organisms.

Studies conducted to investigate the effects of burial of benthic infauna by offshore oil and gas exploration activities have found that recovery begins almost immediately following burial completion, and that recovery to near pre-disturbance conditions can occur within one year, depending upon the extent of burial and other environmental conditions (Dames and Moore 1981). Following the pre-lay grapnel run, cable burial, and diver jetting (as necessary), the post-installation condition of the seabed will not prevent benthic communities from re-establishing.

The benthic habitat will not be destroyed or altered to the extent that benthic communities cannot re-establish. The benthic communities affected have no special status under federal, state, or local policies, statutes, or regulations. Because resident benthic communities would not be prevented from re-establishing, and sediment disturbance does not affect special status species or habitat, the impact on benthic biota would be adverse but not significant.

The cable vessel engines use diesel for fuel, which is stored on board the vessel. The sea plow holds about 100 liters of hydraulic fluid to operate steering and adjusting burial depth. Other than fuel and hydraulic fluid, the vessels do not transport oil, nor do they perform operations that are common causes of oil releases, such as fuel transfers. However, if there were a collision severe enough to breach the fuel tank, oil could be released to marine waters.

Although a marine oil release from a cable lay vessel during installation is considered to be extremely unlikely, the potential effects on marine resources are evaluated below. The affected area would be highly dependent on the location, time and environmental conditions at the time of the release. For the purposes of this analysis, the effects of oil are described. These effects could apply to the resources identified in the project area.

The effects of oil pollution on biological resources range from temporary, sublethal pathological effects (e.g., corneal lesions and changes in blood parameters) to mortality.

Mitigations proposed by the applicant to prevent an oil release, and contain and remove a spill if one occurs include a shipboard oil spill prevention and response plan, navigational measures to prevent collision, and on-water spill control equipment on the support boats to respond to a release. A marine oil release could have significant effects on marine resources. However, the risk of the project activities resulting in an oil release is no greater than the background risk for marine oil spills. In addition, the mitigation measures proposed by the applicant to prevent, contain, and recover a spill, if one occurs, further reduce the potential for marine resources to be adversely affected by project activity, making the effect adverse but not significant.

Operation Impacts

If a repair is necessary, the disturbance to benthic organisms would be similar to those occurring during cable installation, except that the disturbance would be localized rather than along the entire route. Potential impacts to soft substrate benthic organisms are related to sediment suspension, causing reduced light penetration, as well as physical burial and destruction of organisms. If the repair location is near one of the rock outcrops, the retrieval point for the repair will be relocated - either along the affected cable or by approaching from the opposite side - to avoid contact with the rock outcrop. Therefore, there would be no potential for

disturbance to hard-substrate biota. In addition, because resident benthic communities would not be prevented from re-establishing, the effect of cable repair on biological resources is less than significant.

Although considered extremely unlikely, there is a potential for the vessels involved in cable repair operations to have accidents that could result in a release of oil to marine waters. The potential effects of oil on marine biological resources range from temporary, sublethal pathological effects to mortality. The area affected would depend on the location, time, and environmental conditions at the time of the release.

Mitigations proposed by the applicant to prevent an oil release, and contain and remove a spill if one occurs, include a shipboard oil spill prevention and response plan, navigational measures to prevent collision, and on-water spill control equipment to respond to a release. A marine oil release could have significant effects on marine resources. However, the risk of the project activities resulting in an oil release is no greater than the background risk for marine oil spills. In addition, the mitigation measures proposed by the applicant to prevent, contain, and recover a spill, if one occurs, further reduce the potential for marine resources to be adversely affected by project activity, making the effect adverse but not significant.

Cable Landing Site

Project activities at the cable-landing sites for Alternative 1 and Alternative 2 involve the use of HDD methods to bring the conduit onshore. Alternative 2 proposes to use an existing Duke pipeline to bring the cable onshore, along with HDD to install the cable beneath the harbor channel to reach MBARI property on the south side. Based on the discussion in Section 3.5 and the proposed mitigation measures presented in Table 11-1, the effects on biological resources is not expected to occur.

Operation Impacts

Once installed, the cable landing will be subsurface may require periodic maintenance. Any future maintenance activities onshore or within the bay would require additional permit submittals, and agency consultation to ensure impacts to biological resources are minimized.

Project Removal

The project has a duration of 25 years. The alternatives for removing the cable system range from leaving the cable in place to partial or complete removal of the entire cable.

Pursuant to the standard lease terms of the CSLC, upon the expiration or sooner termination of a lease, the CSLC may take title to any or all improvements, or the CSLC can require that all or any portion of the cables be removed at the CSLC's

discretion. In removing any or all improvements, all permits or other governmental approvals must be obtained prior to any removal.

At the end of the lifetime of the project, the operator would have the cable inspected to determine its condition. Cable inspection offshore would consist of an ROV inspection. If it is authorized by agencies with jurisdiction over the cable, removal would be complete if the inspection confirms that the cable is still buried.

In addition to an inspection, if the cable is partially or completely removed, the equipment and procedures used would be similar to those used during project installation. A vessel would be used to remove the cable from the seafloor and store and transport the cable for disposal. A grapnel and/or ROV would be used to locate, cut, and remove the cable from the seafloor.

As discussed previously in this section, the cable installation and operation would not result in significant impacts to biological resources. The potential impacts to biological resources would be reduced to less than significant levels by the implementation of proposed mitigation measures. The same types of operations and accompanying mitigation measures would apply to the marine activities carried out during cable removal. Since the activities required for removal would be equivalent to those for installation and operation, it is anticipated that no significant impacts would result from the range of removal activities identified.

At the time that a specific plan for removal is proposed, agencies with jurisdiction would review the potential environmental consequences that could result from the proposed activities and make a conclusion about what level of additional environmental review, if any, would be necessary. The impacts would be assessed based on the current equipment and techniques for removal, project-specific information, historical data collected during the lifetime of the cable, and the current environmental conditions in the cable area.

9.2.1 Species of Concern

This section describes special-status species that may have suitable habitat within the project area, as well as those that may be directly or indirectly affected by project activities.

Steelhead (Oncorhynchus mykiss)

The steelhead is an anadromous species found in coastal streams and creeks in California and Oregon. It generally spends from one month to several years in the freshwater streams, migrates to the sea where it spends one to four years, then returns to streams to spawn. Most spawning occurs from December to May but may occur in the fall as well (Jones and Stokes Associates, Inc. 1981).

The Southern California steelhead ESU was federally listed as endangered under the ESA in October of 1997.

Coho Salmon (Oncorhyncus kisutch)

Central California ESU coho salmon are federally listed as threatened under the federal ESA and listed as endangered under the state ESA. They were listed as threatened by federal ESA on December 2, 1996 and listed as endangered by California ESA on December 31, 1995. Coho salmon generally begin their migration in late summer or fall, and spawning is completed by mid-winter.

California Grunion (*Leuresthes tenuis*)

Grunion (*Leuresthes tenuis*) are members of the silversides family, Atherinidae, along with the jacksmelt and topsmelt. They normally occur from Point Conception, California, to Point Abreojos, Baja California. Occasionally, they are found farther north to Monterey Bay and south to San Juanico Bay, Baja California. They inhabit the nearshore waters from the surf to a depth of 60 feet. Tagging studies indicate that they are non-migratory.

It spawns at night high on sandy beaches, usually from February to August. Spawning occurs for only a few hours per season, on the third or fourth night following either a full or new moon, and then only 1 to 3 hours after a very high tide. The eggs remain buried in the sand for about 10 days until the next high tide washes them out to sea, where the young develop. Although it is not listed as threatened or endangered, this species is a popular sport fish, the taking of which is regulated (Jones and Stokes Associates, Inc. 1981).

Pismo Clam (Tivela stultorum)

The Pismo clam was once abundant on the sandy beaches of Central and Southern California. Pismo clams burrow no more than 6 inches deep and are usually found in 1 to 3 feet of water at low tide. Some sources have stated that Pismo clams have a depth range of approximately 90 feet. The Pismo Clam is harvested by recreational clammers and preyed upon by sea otters. Although it is not listed as threatened or endangered, CDFG regulates harvest levels within reserves and has established clam reserves on beaches in Central California.

10 Analysis of Effects Conclusion

The preceding *Analysis of Effects* presents an assessment of the potential short and long-term effects to EFH that will occur based on construction, operational, and abandonment activities associated with the installation of the MARS cable. Based on the definition for adverse effect, as provided in the NMFS Guidance, it is predicted that no reduction in quality and/or quantity of EFH is likely. Minimal short-term impacts to benthic biota will occur based on cable laying methods and HDD activities, but these communities will reestablish to near pre-construction levels within the first year following construction. Direct impacts to fish communities managed under the three Pacific FMPs will not occur. Fish will most likely compensate for short-term impacts to feeding grounds during construction, and resume normal activities in time. No toxicological impacts which could result in acute or chronic effects will occur based on the methods and materials to be used during construction. No sensitive nursery areas are to be crossed by the cable route and thus no reduction in population yields are expected.

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